SEARCH REQUEST FORM

Scientific and Technical Information Center

Requester's Full Name: _BEN SACKEY_ Examiner # : _73489_ Date: _12/12/02_
Art Unit: _1626_ Phone Number 30 _5-6889_ Serial Number: _10/047 807_
Mail Box and Bldg/Room Location: _CM1 3E11_ Results Format Preferred (circle): PAPER DISK E-MAIL

If more than one search is submitted, please prioritize searches in order of need.
****

Please provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be searched. Include the selected species or structures, keywords, synonyms, acronyms, and registry numbers, and combine with the concept or utility of the invention. Define any terms that may have a special meaning. Give examples or relevant citations, authors, etc, if known. Please attach a copy of the cover sheet, pertinent claims, and abstract.

Title of Invention: _Process for the preparation of thiazole derivatives_

Inventors (please provide full names): _Pittevna et al._

Earliest Priority Filing Date: _12/19/96_

For Sequence Searches Only Please include all pertinent information (parent, child, divisional, or issued patent numbers) along with the appropriate serial number.
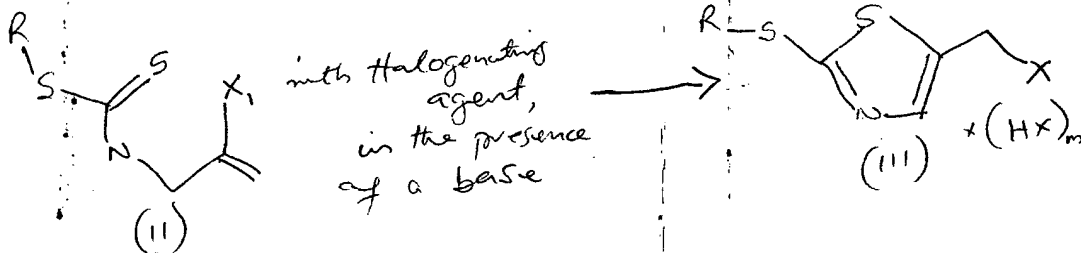
R and R₆ are as defined in the claim

X₁ is a leaving group (e.g. halogens, -O-C(=O)-A) where A is C₁-₈ alkyl

-O-Si(C₁-₈ alkyl)₃

Point of Contact:
Barb O'Bryen
Technical Information Specialist
STIC CM1 6A05 308-4291

JOHANN RICHTER
SUPERVISORY PATENT EXAMINER
GROUP 1800

**

STAFF USE ONLY

Type of Search		Vendors and cost where applicable	
Searcher: _/3013_	NA Sequence (#)_____	STN _369_	
Searcher Phone #: _____	AA Sequence (#)_____	Dialog _____	
Searcher Location: _____	Structure (#) _4_	Questel/Orbit _____	
Date Searcher Picked Up: _____	Bibliographic _____	Dr.Link _____	
Date Completed: _12-13-02_	Litigation _____	Lexis/Nexis _____	
Searcher Prep & Review Time: _30_	Fulltext _____	Sequence Systems _____	
Clerical Prep Time: _____	Patent Family _____	WWW/Internet _____	
Online Time: _19_	Other _____	Other (specify)_____	

PTO-1590 (8-01)

BioTech-Chem Library
Search Results
Feedback Form (Optional)
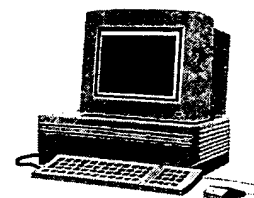
Scientific & Technical Information Center

The search results generated for your recent request are attached. If you have any questions or comments (compliments or complaints) about the scope or the results of the search, please contact *the BioTech-Chem searcher* who conducted the search *or contact*:

Mary Hale, Supervisor, 308-4258
CM-1 Room 1E01

Voluntary Results Feedback Form

➤ *I am an examiner in Workgroup:*   *(Example: 1610)*

➤ *Relevant prior art found, search results used as follows:*

☐ 102 rejection

☐ 103 rejection

☐ Cited as being of interest.

☐ Helped examiner better understand the invention.

☐ Helped examiner better understand the state of the art in their technology.

Types of relevant prior art found:

☐ Foreign Patent(s)

☐ Non-Patent Literature
(journal articles, conference proceedings, new product announcements etc.)

➤ *Relevant prior art not found:*

☐ Results verified the lack of relevant prior art (helped determine patentability).

☐ Search results were not useful in determining patentability or understanding the invention.

Other Comments:

Drop off completed forms at the **Circulation Desk CM-1,** or send to Mary Hale, **CM1-1E01 or mary.hale@uspto.gov**

=> fil reg; d stat que 17; d que nos 111;d que nos 112; fil capl;   d que nos 117; fil
uspatf; d que nos 124
FILE 'REGISTRY' ENTERED AT 10:42:35 ON 13 DEC 2002
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Property values tagged with IC are from the ZIC/VINITI data file
provided by InfoChem.

STRUCTURE FILE UPDATES: 12 DEC 2002   HIGHEST RN 476148-76-2
DICTIONARY FILE UPDATES: 12 DEC 2002   HIGHEST RN 476148-76-2
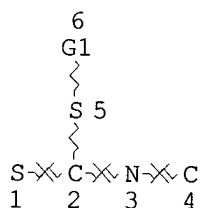
TSCA INFORMATION NOW CURRENT THROUGH MAY 20, 2002

    Please note that search-term pricing does apply when
    conducting SmartSELECT searches.

Crossover limits have been increased. See HELP CROSSOVER for details.

Experimental and calculated property data are now available. See HELP
PROPERTIES for more information. See STNote 27, Searching Properties
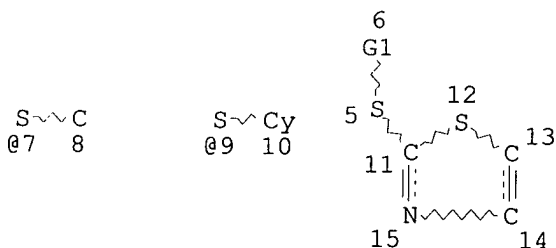in the CAS Registry File, for complete details:
http://www.cas.org/ONLINE/STN/STNOTES/stnotes27.pdf

L1   STR

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      G1
      ⟨               S⌇C          S⌇Cy
      S 5             @7  8        @9  10
      ⟨
S⌇C⌇N⌇C
1   2   3   4
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= ring or chain bonds & nodes

full file search done on this structure

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NSPEC   IS RC   AT   2
NSPEC   IS RC   AT   3
NSPEC   IS RC   AT   4
DEFAULT MLEVEL IS ATOM
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS 10

STEREO ATTRIBUTES: NONE
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L4   STR

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@7  8        @9  10       11 C⌇   C 13
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                            N⌇⌇⌇C
                            15      14
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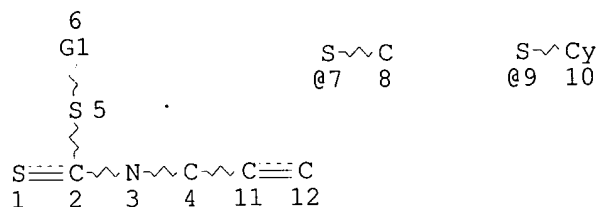
subset searches done for product &

VAR G1=C/CY/7/9
NODE ATTRIBUTES:
DEFAULT MLEVEL IS ATOM
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
RSPEC I
NUMBER OF NODES IS   11

STEREO ATTRIBUTES: NONE
L5   STR

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      ⟩                   @7  8         @9  10
      S 5      .
      ⟨
      ⟩
 S⩵C⌁N⌁C⌁C⩶C
 1   2   3   4   11  12
```

reactant

VAR G1=C/CY/7/9
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NSPEC   IS RC   1
NSPEC   IS RC   AT   2
NSPEC   IS RC   AT   3
NSPEC   IS RC   AT   4
DEFAULT MLEVEL IS ATOM
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS   12

STEREO ATTRIBUTES: NONE
L7   6053 SEA FILE=REGISTRY SUB=L3 SSS FUL (L4 OR L5)

100.0% PROCESSED 36413 ITERATIONS   6053 ANSWERS
SEARCH TIME: 00.00.02

L1   STR
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L4   STR
L5   STR
L7   6053 SEA FILE=REGISTRY SUB=L3 SSS FUL (L4 OR L5)
L10   418236 SEA FILE=REGISTRY ABB=ON   16.299/RID
L11   5717 SEA FILE=REGISTRY ABB=ON   L10 AND L7   *Product*

L1   STR
L3   51272 SEA FILE=REGISTRY SSS FUL L1
L4   STR
L5   STR
L7   6053 SEA FILE=REGISTRY SUB=L3 SSS FUL (L4 OR L5)
L10   418236 SEA FILE=REGISTRY ABB=ON   16.299/RID
L11   5717 SEA FILE=REGISTRY ABB=ON   L10 AND L7
L12   336 SEA FILE=REGISTRY ABB=ON   L7 NOT L11   *Reactant*

FILE COVERS 1907 - 13 Dec 2002   VOL 137 ISS 25
FILE LAST UPDATED: 12 Dec 2002   (20021212/ED)

   This file contains CAS Registry Numbers for easy and accurate
   substance identification.

CAS roles have been modified effective December 16, 2001. Please
check your SDI profiles to see if they need to be revised. For
information on CAS roles, enter HELP ROLES at an arrow prompt or use
the CAS Roles thesaurus (/RL field) in this file.

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L3   51272 SEA FILE=REGISTRY SSS FUL L1
L4   STR
L5   STR
L7   6053 SEA FILE=REGISTRY SUB=L3 SSS FUL (L4 OR L5)
L10   418236 SEA FILE=REGISTRY ABB=ON   16.299/RID
L11   5717 SEA FILE=REGISTRY ABB=ON   L10 AND L7
L12   336 SEA FILE=REGISTRY ABB=ON   L7 NOT L11
L13   978 SEA FILE=CAPLUS ABB=ON   L11/P — *citations discussing preparation*
L14   151 SEA FILE=CAPLUS ABB=ON   L12
L17   1 SEA FILE=CAPLUS ABB=ON   L13 AND L14

FILE 'USPATFULL' ENTERED AT 10:42:35 ON 13 DEC 2002
CA INDEXING COPYRIGHT (C) 2002 AMERICAN CHEMICAL SOCIETY (ACS) .

FILE COVERS 1971 TO PATENT PUBLICATION DATE: 12 Dec 2002 (20021212/PD)
FILE LAST UPDATED: 12 Dec 2002 (20021212/ED)
HIGHEST GRANTED PATENT NUMBER: US6493878
HIGHEST APPLICATION PUBLICATION NUMBER: US2002188996
CA INDEXING IS CURRENT THROUGH 12 Dec 2002 (20021212/UPCA)
ISSUE CLASS FIELDS (/INCL) CURRENT THROUGH: 12 Dec 2002 (20021212/PD)
REVISED CLASS FIELDS (/NCL) LAST RELOADED: Oct 2002
USPTO MANUAL OF CLASSIFICATIONS THESAURUS ISSUE DATE: Aug 2002

>>>   USPAT2 is now available. USPATFULL contains full text of the   <<<
>>>   original, i.e., the earliest published granted patents or   <<<
>>>   applications. USPAT2 contains full text of the latest US   <<<
>>>   publications, starting in 2001, for the inventions covered in   <<<
>>>   USPATFULL. A USPATFULL record contains not only the original   <<<
>>>   published document but also a list of any subsequent   <<<
>>>   publications. The publication number, patent kind code, and   <<<
>>>   publication date for all the US publications for an invention   <<<
>>>   are displayed in the PI (Patent Information) field of USPATFULL   <<<

                  Searched by Barb O'Bryen, STIC 308-4291

>>>   records and may be searched in standard search fields, e.g., /PN,   <<<
>>>   /PK, etc.   <<<

>>>   USPATFULL and USPAT2 can be accessed and searched together   <<<
>>>   through the new cluster USPATALL. Type FILE USPATALL to   <<<
>>>   enter this cluster.   <<<
>>>   <<<
>>>   Use USPATALL when searching terms such as patent assignees,   <<<
>>>   classifications, or claims, that may potentially change from   <<<
>>>   the earliest to the latest publication.   <<<

This file contains CAS Registry Numbers for easy and accurate
substance identification.


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L1              STR
L3        51272 SEA FILE=REGISTRY SSS FUL L1
L4              STR
L5              STR
L7         6053 SEA FILE=REGISTRY SUB=L3 SSS FUL (L4 OR L5)
L10      418236 SEA FILE=REGISTRY ABB=ON  16.299/RID
L11        5717 SEA FILE=REGISTRY ABB=ON  L10 AND L7
L12         336 SEA FILE=REGISTRY ABB=ON  L7 NOT L11
L20        1822 SEA FILE=REGISTRY ABB=ON  L11 AND USPATFULL/LC
L21          63 SEA FILE=REGISTRY ABB=ON  L12 AND USPATFULL/LC
L22         488 SEA FILE=USPATFULL ABB=ON  L20
L23          20 SEA FILE=USPATFULL ABB=ON  L21
L24           2 SEA FILE=USPATFULL ABB=ON  L22 AND L23
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FILE 'CAPLUS' ENTERED AT 10:42:41 ON 13 DEC 2002
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FILE 'USPATFULL' ENTERED AT 10:42:41 ON 13 DEC 2002
CA INDEXING COPYRIGHT (C) 2002 AMERICAN CHEMICAL SOCIETY (ACS)
PROCESSING COMPLETED FOR L17
PROCESSING COMPLETED FOR L24
L34   3 DUP REM L17 L24 (0 DUPLICATES REMOVED)
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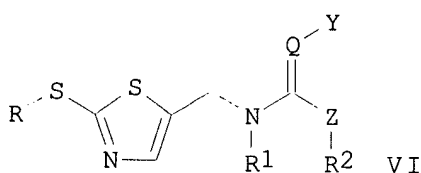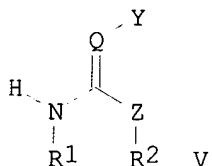   ANSWERS '2-3' FROM FILE USPATFULL
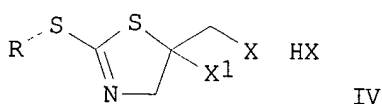

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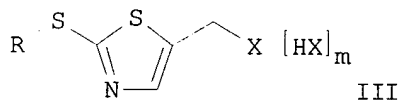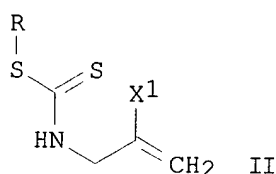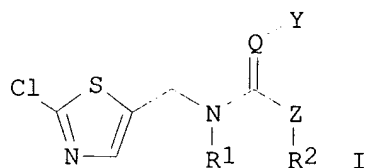
L34 ANSWER 1 OF 3 CAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 1998:424237 CAPLUS
DOCUMENT NUMBER: 129:95484
TITLE: Preparation of thiazoles
INVENTOR(S):   Pitterna, Thomas; Szczepanski, Henry; Maienfisch,
                        Peter; Huter, Ottmar Franz; Rapold, Thomas; Senn,
                        Marcel; Gobel, Thomas; O'Sullivan, Anthony Cornelius;
                        Seifert, Gottfried
PATENT ASSIGNEE(S):   Novartis A.-G., Switz.
SOURCE: PCT Int. Appl., 47 pp.
                        CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

    PATENT NO.   KIND DATE   APPLICATION NO. DATE

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WO 9827074         A1   19980625      WO 1997-EP7087    19971217
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        DK, EE, ES, FI, GB, GE, GH, GM, GW, HU, ID, IL, IS, JP, KE, KG,
        KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX,
        NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT,
        UA, UG, US, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
    RW: GH, GM, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, DE, DK, ES, FI,
        FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM,
        GA, GN, ML, MR, NE, SN, TD, TG
AU 9857592         A1   19980715      AU 1998-57592     19971217
AU 727669          B2   20001221
EP 946531          A1   19991006      EP 1997-953841    19971217
    R:  AT, BE, CH, DE, DK, ES, FR, GB, IT, LI, NL, SE, IE, FI
CN 1241182         A    20000112      CN 1997-180777    19971217
CN 1086388         B    20020619
BR 9714066         A    20000509      BR 1997-14066     19971217
TW 432056          B    20010501      TW 1997-86119053  19971217
JP 2001506254      T2   20010515      JP 1998-527322    19971217
ZA 9711358         A    19980708      ZA 1997-11358     19971218
US 6121455         A    20000919      US 1999-331432    19990813
US 6369233         B1   20020409      US 2000-628392    20000801
PRIORITY APPLN. INFO.:             CH 1996-3124     A  19961219
                                   WO 1997-EP7087   W  19971217
                                   US 1999-331432   A3 19990813
OTHER SOURCE(S):     CASREACT 129:95484; MARPAT 129:95484
GI
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AB   The title compds. [I; Q = CH, N; Y = NO2, CN; Z = CHR3, O, NR3, S; R1, R2
     = H, (un)substituted C1-6 alkyl; R1R2 = alkylene which may addnl. contain
     a hetero atom selected from the group consisting of NR5, O and S; R3 = H,
     (un)substituted C1-12 alkyl] were prepd. by a) reacting dithiocarbamate II

[R = (un)substituted C1-12 alkyl, C2-4 alkenyl, C2-4 alkynyl, etc.; X1 = a leaving group)] with a halogenating agent to form thiazole III [X = halo; m = 0-1], or by b) converting II by means of a halogenating agent into thiazoline IV, optionally c) converting IV into III, d) reacting III with the compd. V to form thiazole VI, e) or reacting IV with V to form thiazole VI, and f) treatment of compd. VI with chlorinating agent.

IT   **192439-34-2P 192439-36-4P 192439-37-5P**
     192439-38-6P 192439-39-7P 192439-40-0P
     192439-46-6P 192439-47-7P 192439-48-8P
     192723-46-9P 209548-64-1P 209548-65-2P
     209548-66-3P 209548-71-0P
     RL: IMF (Industrial manufacture); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
        (prepn. of thiazoles)
RN   192439-34-2 CAPLUS
CN   Thiazole, 5-(chloromethyl)-2-[(phenylmethyl)thio]-, hydrochloride (9CI) (CA INDEX NAME)
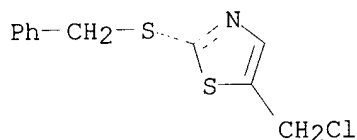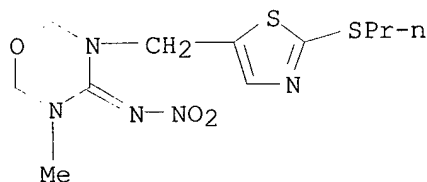

RN   192439-36-4 CAPLUS
CN   4H-1,3,5-Oxadiazin-4-imine, tetrahydro-3-methyl-5-[[2-(methylthio)-5-thiazolyl]methyl]-N-nitro- (9CI)   (CA INDEX NAME)
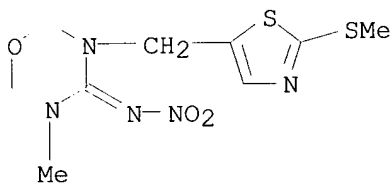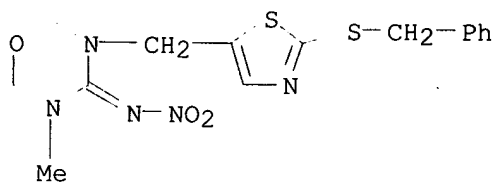

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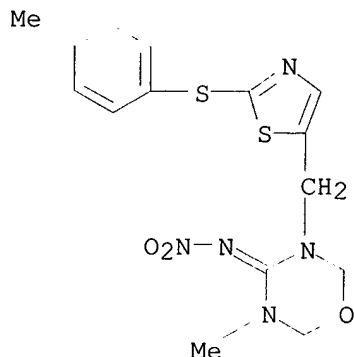

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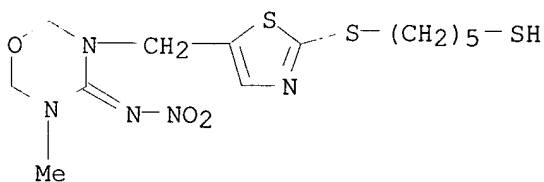
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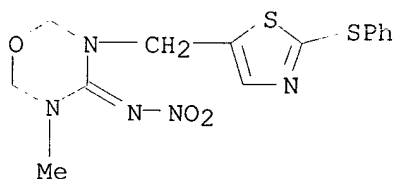

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CN   1-Pentanethiol, 5-[[5-[[dihydro-5-methyl-4-(nitroimino)-2H-1,3,5-oxadiazin-
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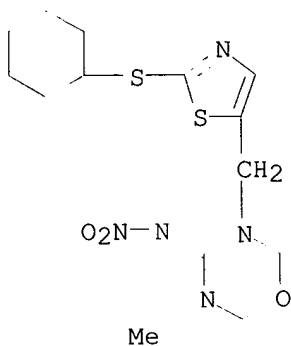

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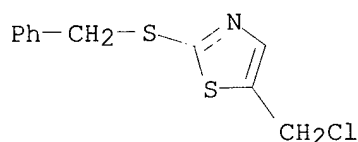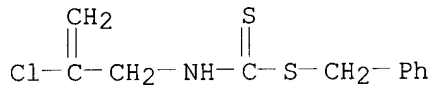

RN   192439-47-7 CAPLUS
CN   4H-1,3,5-Oxadiazin-4-imine, 3-[[2-(cyclohexylthio)-5-
      thiazolyl]methyl]tetrahydro-5-methyl-N-nitro- (9CI)   (CA INDEX NAME)
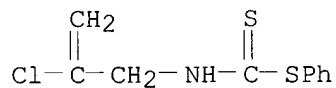
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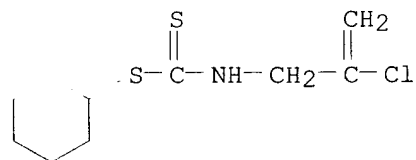

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CN   Carbamodithioic acid, (2-chloro-2-propenyl)-, phenylmethyl ester (9CI)
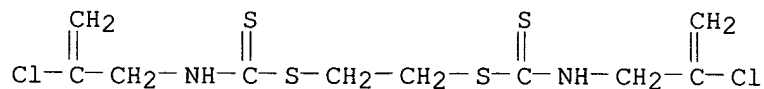   (CA INDEX NAME)

RN   209548-64-1   CAPLUS
CN   Carbamodithioic acid, (2-chloro-2-propenyl)-, phenyl ester (9CI)   (CA
      INDEX NAME)

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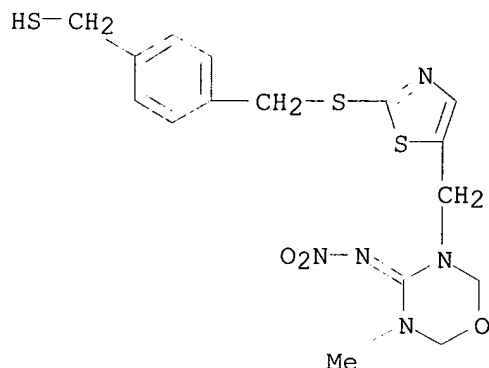   INDEX NAME)

RN   209548-66-3   CAPLUS
CN   Carbamodithioic acid, (2-chloro-2-propenyl)-, 1,2-ethanediyl ester (9CI)
      (CA INDEX NAME)

$$Cl-\underset{\underset{Cl}{\overset{\|}{C}}}{\overset{\overset{CH_2}{\|}}{C}}-CH_2-NH-\underset{\overset{\|}{S}}{C}-S-CH_2-CH_2-S-\underset{\overset{\|}{S}}{C}-NH-CH_2-\underset{\overset{\overset{CH_2}{\|}}{C}}{C}-Cl$$

RN   209548-71-0 CAPLUS
CN   Benzenemethanethiol, 4-[[[5-[[dihydro-5-methyl-4-(nitroimino)-2H-1,3,5-
     oxadiazin-3(4H)-yl]methyl]-2-thiazolyl]thio]methyl]- (9CI) (CA INDEX
     NAME)

                Me

REFERENCE COUNT: 4   THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS
                                   RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L34 ANSWER 2 OF 3 USPATFULL
ACCESSION NUMBER: 2002:75588 USPATFULL
TITLE: Process for the preparation of thiazole derivatives
INVENTOR(S):   Pitterna, Thomas, Basel, SWITZERLAND
                          Szczepanski, Henry, Wallbach, SWITZERLAND
                          Maienfisch, Peter, Rodersdorf, SWITZERLAND
                          Huter, Ottmar Franz, Lorrach, GERMANY, FEDERAL REPUBLIC
                          OF
                          Rapold, Thomas, Wallbach, SWITZERLAND
                          Senn, Marcel, Blonay, SWITZERLAND
                          Gobel, Thomas, Lorrach, GERMANY, FEDERAL REPUBLIC OF
                          O'Sullivan, Anthony Cornelius, Basel, SWITZERLAND
                          Seifert, Gottfried, Magden, SWITZERLAND
PATENT ASSIGNEE(S):   Syngenta Crop Protection, Inc., Greensboro, NC, United
                          States (U.S. corporation)

                          NUMBER   KIND   DATE
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PATENT INFORMATION: US 6369233   B1   20020409
APPLICATION INFO.:   US 2000-628392   20000801 (9)
RELATED APPLN. INFO.:   Division of Ser. No. US 331432, now patented, Pat. No.
                          US 6121455

                          NUMBER   DATE
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PRIORITY INFORMATION: CH 1996-3124   19961219
DOCUMENT TYPE: Utility
FILE SEGMENT: GRANTED
PRIMARY EXAMINER: Higel, Floyd D.
ASSISTANT EXAMINER: Sackey, Ebenezer
LEGAL REPRESENTATIVE: Teoli, Jr., William A., Allen, Rose M.
NUMBER OF CLAIMS: 2
EXEMPLARY CLAIM: 1

NUMBER OF DRAWINGS: 0 Drawing Figure(s); 0 Drawing Page(s)
LINE COUNT: 1190
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB   The Invention relates to a process for the preparation of a compound of
        the formula   ##STR1##

        wherein Q, Y, Z, R.sub.1, R.sub.2, R.sub.3, R.sub.4 and R.sub.5 are as
        defined in the specification, which comprises

        a) reacting a compound of the formula   ##STR2##

         with a halogenating agent to form a compound of the formula   ##STR3##

        b) converting a compound of formula (II) by means of a halogenating
        agent into a compound of the formula   ##STR4##

         optionally

        c) converting the compound of formula (IV) into a compound of formula
        (III);

        d) converting a compound of formula (III) by means of a compound of the
        formula   ##STR5##

        e) converting a compound (IV) by means of a compound (V) into a compound
        (VI); and

        f) converting a compound (VI) by means of a chlorinating agent into a
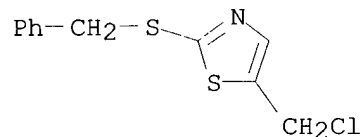   compound (I);

        a compound (IV); to a process for the preparation of a compound (III)
        and to a process for the preparation of a compound (IV).

CAS INDEXING IS AVAILABLE FOR THIS PATENT.
IT **192439-34-2P 192439-36-4P 192439-37-5P**
    192439-38-6P 192439-39-7P 192439-40-0P
    192439-46-6P 192439-47-7P 192439-48-8P
    192723-46-9P 209548-64-1P 209548-65-2P
    209548-66-3P 209548-71-0P
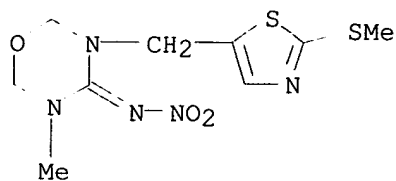   (prepn. of thiazoles)
RN   192439-34-2 USPATFULL
CN   Thiazole, 5-(chloromethyl)-2-[(phenylmethyl)thio]-, hydrochloride (9CI)
        (CA INDEX NAME)

Ph—CH2—S—⟨N / S⟩—CH2Cl
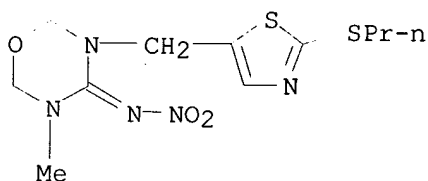
● HCl

RN   192439-36-4 USPATFULL
CN   4H-1,3,5-Oxadiazin-4-imine, tetrahydro-3-methyl-5-[[2-(methylthio)-5-
        thiazolyl]methyl]-N-nitro- (9CI)   (CA INDEX NAME)
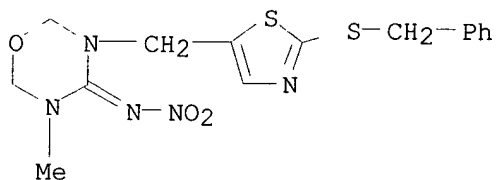
RN   192439-37-5 USPATFULL
CN   4H-1,3,5-Oxadiazin-4-imine, tetrahydro-3-methyl-N-nitro-5-[[2-(propylthio)-
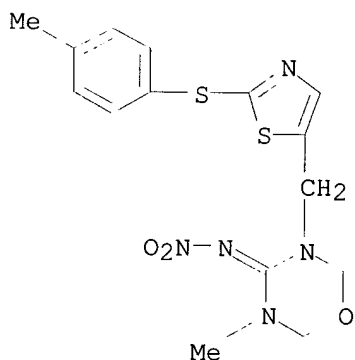   5-thiazolyl]methyl]- (9CI)   (CA INDEX NAME)

RN   192439-38-6 USPATFULL
CN   4H-1,3,5-Oxadiazin-4-imine, tetrahydro-3-methyl-N-nitro-5-[[2-
      [(phenylmethyl)thio]-5-thiazolyl]methyl]- (9CI)   (CA INDEX NAME)
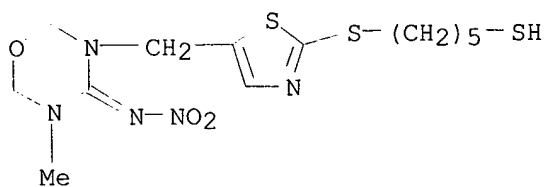

RN   192439-39-7 USPATFULL
CN   4H-1,3,5-Oxadiazin-4-imine, tetrahydro-3-methyl-5-[[2-[(4-
      methylphenyl)thio]-5-thiazolyl]methyl]-N-nitro- (9CI)   (CA INDEX NAME)
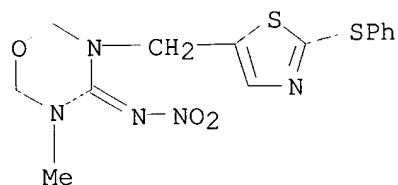

RN   192439-40-0 USPATFULL
CN   1-Pentanethiol, 5-[[5-[[dihydro-5-methyl-4-(nitroimino)-2H-1,3,5-oxadiazin-
      3(4H)-yl]methyl]-2-thiazolyl]thio]- (9CI)   (CA INDEX NAME)
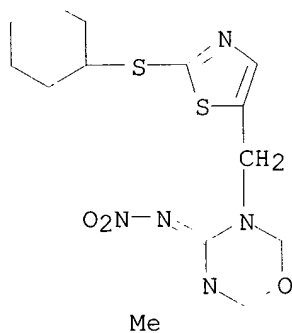
RN   192439-46-6 USPATFULL
CN   4H-1,3,5-Oxadiazin-4-imine, tetrahydro-3-methyl-N-nitro-5-[[2-(phenylthio)-
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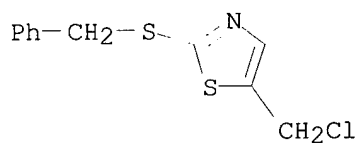

RN   192439-47-7 USPATFULL
CN   4H-1,3,5-Oxadiazin-4-imine, 3-[[2-(cyclohexylthio)-5-
      thiazolyl]methyl]tetrahydro-5-methyl-N-nitro- (9CI)   (CA INDEX NAME)
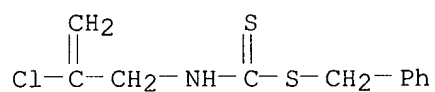

RN   192439-48-8 USPATFULL
CN   Thiazole, 5-(chloromethyl)-2-[(phenylmethyl)thio]- (9CI)   (CA INDEX NAME)

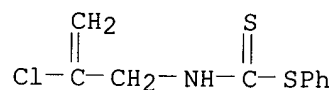RN   192723-46-9 USPATFULL
CN   Carbamodithioic acid, (2-chloro-2-propenyl)-, phenylmethyl ester (9CI)
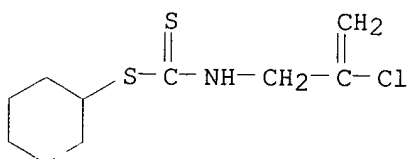   (CA INDEX NAME)

RN   209548-64-1   USPATFULL
CN   Carbamodithioic acid, (2-chloro-2-propenyl)-, phenyl ester (9CI)   (CA
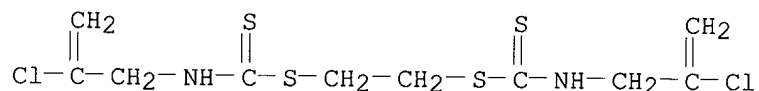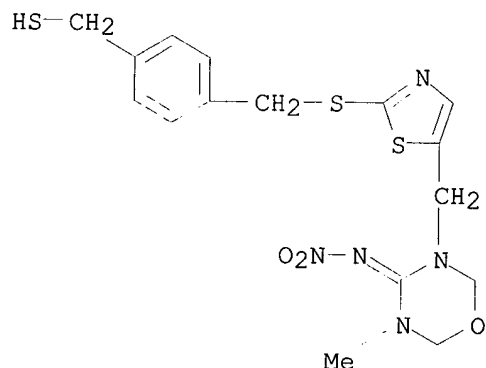   INDEX NAME)

$$\underset{Cl}{} - \underset{\overset{\parallel}{C}}{\overset{CH_2}{\parallel}} - CH_2 - NH - \underset{\overset{\parallel}{C}}{\overset{S}{\parallel}} - SPh$$

RN   209548-65-2   USPATFULL
CN   Carbamodithioic acid, (2-chloro-2-propenyl)-, cyclohexyl ester (9CI)   (CA
      INDEX NAME)

$$S - \underset{\overset{\parallel}{C}}{\overset{S}{\parallel}} - NH - CH_2 - \underset{\overset{\parallel}{C}}{\overset{CH_2}{\parallel}} - Cl$$

RN   209548-66-3   USPATFULL
CN   Carbamodithioic acid, (2-chloro-2-propenyl)-, 1,2-ethanediyl ester (9CI)
      (CA INDEX NAME)

$$Cl - \underset{\overset{\parallel}{C}}{\overset{CH_2}{\parallel}} - CH_2 - NH - \underset{\overset{\parallel}{C}}{\overset{S}{\parallel}} - S - CH_2 - CH_2 - S - \underset{\overset{\parallel}{C}}{\overset{S}{\parallel}} - NH - CH_2 - \underset{\overset{\parallel}{C}}{\overset{CH_2}{\parallel}} - Cl$$

RN   209548-71-0   USPATFULL
CN   Benzenemethanethiol, 4-[[[5-[[dihydro-5-methyl-4-(nitroimino)-2H-1,3,5-
      oxadiazin-3(4H)-yl]methyl]-2-thiazolyl]thio]methyl]- (9CI)   (CA INDEX
      NAME)

L34   ANSWER 3 OF 3   USPATFULL
ACCESSION NUMBER: 2000:125231   USPATFULL
TITLE: Process for the preparation of thiazole derivatives
INVENTOR(S):   Pitterna, Thomas, Basel, Switzerland
                         Szczepanski, Henry, Wallbach, Switzerland
                         Maienfisch, Peter, Rodersdorf, Switzerland
                         Huter, Ottmar Franz, Lorrach, Germany, Federal Republic
                         of

Rapold, Thomas, Wallbach, Switzerland
Senn, Marcel, Blonay, Switzerland
Gobel, Thomas, Lorrach, Germany, Federal Republic of
O'Sullivan, Anthony Cornelius, Basel, Switzerland
Seifert, Gottfried, Magden, Switzerland

PATENT ASSIGNEE(S):   Novartis Crop Protection, Inc., Greensboro, NC, United
                        States (U.S. corporation)

	NUMBER	KIND	DATE	
PATENT INFORMATION:	US 6121455		20000919	
	WO 9827074		19980625	
APPLICATION INFO.:	US 1999-331432		19990813	(9)
	WO 1997-EP7087		19971217	
			19990813	PCT 371 date
			19990813	PCT 102(e) date

	NUMBER	DATE
PRIORITY INFORMATION:	CH 1996-3124	19961219
DOCUMENT TYPE:	Utility	
FILE SEGMENT:	Granted	
PRIMARY EXAMINER:	McKane, Joseph	
ASSISTANT EXAMINER:	Sackey, Ebenezer	
LEGAL REPRESENTATIVE:	Peabody, III, John D., Teoli, Jr., William A.	
NUMBER OF CLAIMS:	6	
EXEMPLARY CLAIM:	1	
LINE COUNT:	1454	

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB   The invention relates to a process for the preparation of a compound of
        the formula ##STR1## and, where applicable, its E/Z-isomers, mixtures of
        E/Z-isomers and/or tautomers, in each case in free form or in salt form,
        wherein

        Q is CH or N,

        Y is NO_2 or CN,

        Z is CHR_3, O, NR_3 or S,

        R_1 and R_2 are either each independently of the other hydrogen
        or unsubstituted or R_4-substituted C_1-C_8 alkyl, or
        together form an alkylene bridge having two or three carbon atoms, and
        said alkylene bridge may additionally contain a hetero atom selected
        from the group consisting of NR_5, O and S,

        R_3 is H or unsubstituted or R_4-substituted C_1-C_{12}
        alkyl,

        R_4 is unsubstituted or substituted aryl or heteroaryl, and

        R_5 is H or C_1-C_{12} alkyl;

        which comprises

        a) reacting a compound of the formula ##STR2## and, where applicable,
        its E/Z-isomers, mixtures of E/Z-isomers and/or tautomers, in each case
        in free form or in salt form, which is known or can be prepared by
        processes known.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.
IT 192439-34-2P 192439-36-4P 192439-37-5P
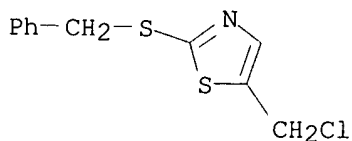   192439-38-6P 192439-39-7P 192439-40-0P

192439-46-6P 192439-47-7P 192439-48-8P
192723-46-9P 209548-64-1P 209548-65-2P
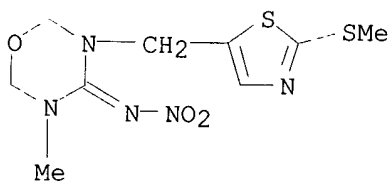**209548-66-3P 209548-71-0P**
(prepn. of thiazoles)
RN   192439-34-2 USPATFULL
CN · Thiazole, 5-(chloromethyl)-2-[(phenylmethyl)thio]-, hydrochloride (9CI)
      (CA INDEX NAME)
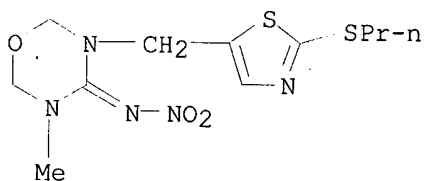

RN   192439-36-4 USPATFULL
CN   4H-1,3,5-Oxadiazin-4-imine, tetrahydro-3-methyl-5-[[2-(methylthio)-5-
      thiazolyl]methyl]-N-nitro- (9CI) (CA INDEX NAME)
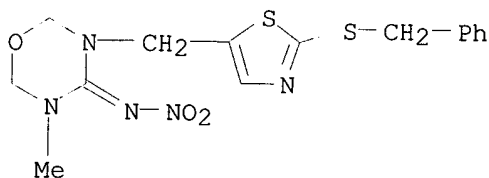

RN   192439-37-5 USPATFULL
CN   4H-1,3,5-Oxadiazin-4-imine, tetrahydro-3-methyl-N-nitro-5-[[2-(propylthio)-
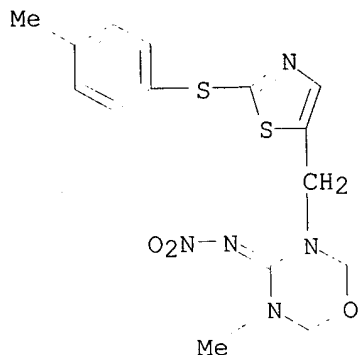   5-thiazolyl]methyl]- (9CI) (CA INDEX NAME)

RN   192439-38-6 USPATFULL
CN   4H-1,3,5-Oxadiazin-4-imine, tetrahydro-3-methyl-N-nitro-5-[[2-
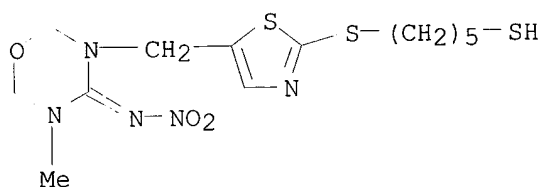   [(phenylmethyl)thio]-5-thiazolyl]methyl]- (9CI) (CA INDEX NAME)
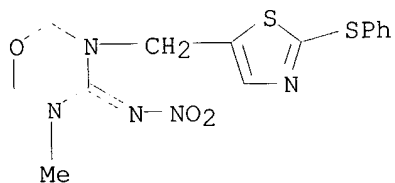

RN   192439-39-7 USPATFULL

CN   4H-1,3,5-Oxadiazin-4-imine, tetrahydro-3-methyl-5-[[2-[(4-
      methylphenyl)thio]-5-thiazolyl]methyl]-N-nitro- (9CI)   (CA INDEX NAME)

RN   192439-40-0   USPATFULL
CN   1-Pentanethiol, 5-[[5-[[dihydro-5-methyl-4-(nitroimino)-2H-1,3,5-oxadiazin-
      3(4H)-yl]methyl]-2-thiazolyl]thio]- (9CI)   (CA INDEX NAME)

RN   192439-46-6   USPATFULL
CN   4H-1,3,5-Oxadiazin-4-imine, tetrahydro-3-methyl-N-nitro-5-[[2-(phenylthio)-
      5-thiazolyl]methyl]- (9CI)   (CA INDEX NAME)

RN   192439-47-7   USPATFULL
CN   4H-1,3,5-Oxadiazin-4-imine, 3-[[2-(cyclohexylthio)-5-
      thiazolyl]methyl]tetrahydro-5-methyl-N-nitro- (9CI)   (CA INDEX NAME)

RN   192439-48-8 USPATFULL
CN   Thiazole, 5-(chloromethyl)-2-[(phenylmethyl)thio]- (9CI)   (CA INDEX NAME)

RN   192723-46-9 USPATFULL
CN   Carbamodithioic acid, (2-chloro-2-propenyl)-, phenylmethyl ester (9CI)
       (CA INDEX NAME)

RN   209548-64-1 USPATFULL
CN   Carbamodithioic acid, (2-chloro-2-propenyl)-, phenyl ester (9CI) (CA
       INDEX NAME)

RN   209548-65-2 USPATFULL
CN   Carbamodithioic acid, (2-chloro-2-propenyl)-, cyclohexyl ester (9CI)   (CA
       INDEX NAME)

RN   209548-66-3 USPATFULL
CN   Carbamodithioic acid, (2-chloro-2-propenyl)-, 1,2-ethanediyl ester (9CI)
       (CA INDEX NAME)

$$\text{Cl}-\overset{\overset{\displaystyle CH_2}{\|}}{C}-CH_2-NH-\overset{\overset{\displaystyle S}{\|}}{C}-S-CH_2-CH_2-S-\overset{\overset{\displaystyle S}{\|}}{C}-NH-CH_2-\overset{\overset{\displaystyle CH_2}{\|}}{C}-\text{Cl}$$
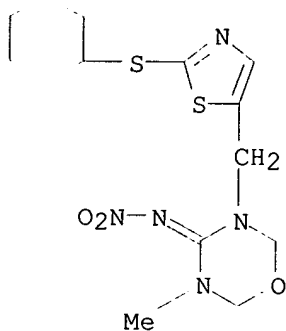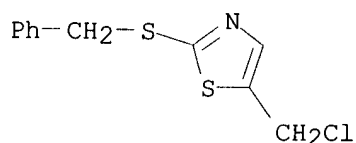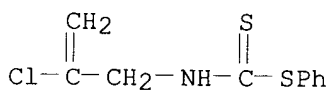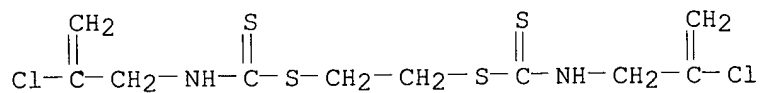
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CN   Benzenemethanethiol, 4-[[[5-[[dihydro-5-methyl-4-(nitroimino)-2H-1,3,5-
      oxadiazin-3(4H)-yl]methyl]-2-thiazolyl]thio]methyl]- (9CI)   (CA INDEX
      NAME)
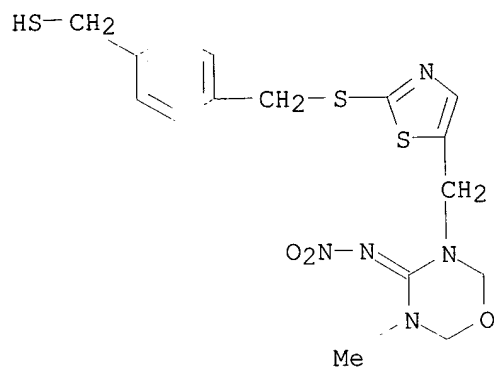
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FILE 'CASREACT' ENTERED AT 10:43:05 ON 13 DEC 2002
USE IS SUBJECT TO THE TERMS OF YOUR CUSTOMER AGREEMENT
COPYRIGHT (C) 2002 AMERICAN CHEMICAL SOCIETY (ACS)
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Some records from 1974 to 1991 are derived from the ZIC/VINITI data file
and provided by InfoChem and some records are produced using some INPI
data from the period prior to 1986.

This file contains CAS Registry Numbers for easy and accurate substance
identification.

Crossover limits have been increased. See HELP RNCROSSOVER for details.

Structure search limits have been raised. See HELP SLIMIT for the new,
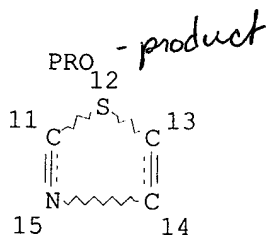higher limits.

L27   *reactant or reagent*   STR
RRT   PRO   *product*
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full file search done on this structure

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GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS   11

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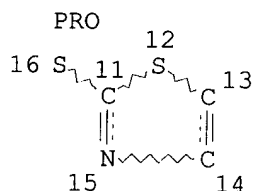
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Searched by Barb O'Bryen, STIC 308-4291

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L32  ANSWER 1 OF 1  CASREACT  COPYRIGHT 2002 ACS
ACCESSION NUMBER:       129:95484  CASREACT
TITLE:                  Preparation of thiazoles
INVENTOR(S):            Pitterna, Thomas; Szczepanski, Henry; Maienfisch,
                        Peter; Huter, Ottmar Franz; Rapold, Thomas; Senn,
                        Marcel; Gobel, Thomas; O'Sullivan, Anthony Cornelius;
                        Seifert, Gottfried
PATENT ASSIGNEE(S):     Novartis A.-G., Switz.
SOURCE:                 PCT Int. Appl., 47 pp.
                        CODEN: PIXXD2
DOCUMENT TYPE:          Patent
LANGUAGE:               English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

    PATENT NO.          KIND  DATE          APPLICATION NO.   DATE
    ---------------     ----  --------      ---------------   --------
    WO 9827074          A1    19980625       WO 1997-EP7087   19971217
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    ZA 9711358          A     19980708       ZA 1997-11358    19971218
    US 6121455          A     20000919       US 1999-331432   19990813
    US 6369233          B1    20020409       US 2000-628392   20000801
PRIORITY APPLN. INFO.:                       CH 1996-3124     19961219
                                             WO 1997-EP7087   19971217
                                             US 1999-331432   19990813

OTHER SOURCE(S):        MARPAT 129:95484
GI
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* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

AB   The title compds. [I; Q = CH, N; Y = NO2, CN; Z = CHR3, O, NR3, S; R1, R2
      = H, (un)substituted C1-6 alkyl; R1R2 = alkylene which may addnl. contain
      a hetero atom selected from the group consisting of NR5, O and S; R3 = H,
      (un)substituted C1-12 alkyl] were prepd. by a) reacting dithiocarbamate II
      [R = (un)substituted C1-12 alkyl, C2-4 alkenyl, C2-4 alkynyl, etc.; X1 = a
      leaving group)] with a halogenating agent to form thiazole III [X = halo;
      m = 0-1], or by b) converting II by means of a halogenating agent into
      thiazoline IV, optionally c) converting IV into III, d) reacting III with
      the compd. V to form thiazole VI, e) or reacting IV with V to form
      thiazole VI, and f) treatment of compd. VI with chlorinating agent.
REFERENCE COUNT: 4   THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS
                                 RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

RX(1) OF 16   ...A ===> **B**

A

(1)

● HCl

B
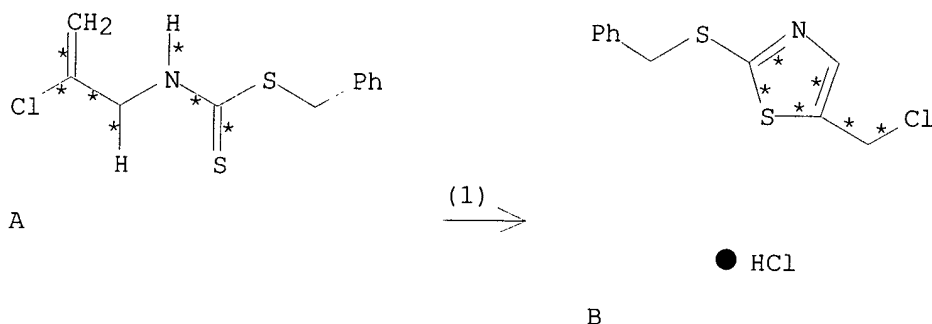
RX(1)   RCT A **192723-46-9**

             STAGE(1)
                RGT   C 144-55-8 NaHCO3
                SOL   108-90-7 PhCl

             STAGE(2)
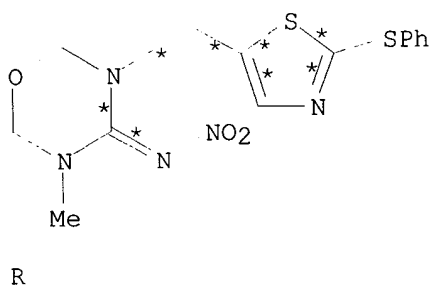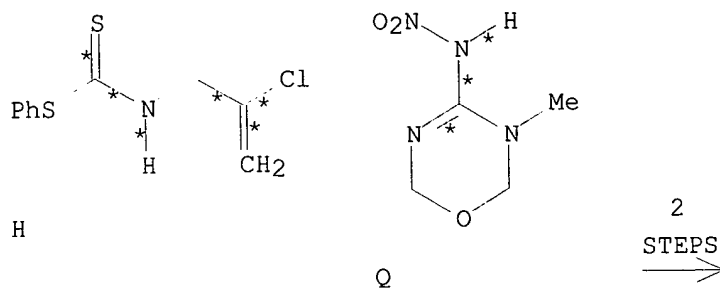   RGT   D 7791-25-5 SO2Cl2

             STAGE(3)
                SOL   110-54-3 Hexane

             STAGE(4)
                RGT   E 7647-01-0 HCl
             PRO B **192439-34-2**

RX(10) OF 16 COMPOSED OF RX(2), RX(5)
RX(10)   **H** + **Q** ===> **R**

H

Q

2
STEPS
⟹

R

RX(2)   RCT H **209548-64-1**

    STAGE(1)
      SOL 74-97-5 BrCH2Cl

    STAGE(2)
      RGT J 7726-95-6 Br2
    PRO I 209548-68-5

RX(5)   RCT Q 153719-38-1

    STAGE(1)
      RGT S 584-08-7 K2CO3, T 36273-11-7 4-Aza-1-
        azoniabicyclo[2.2.2]octane, 1-(chloromethyl)-, chloride
      SOL 78-93-3 EtCOMe

    STAGE(2)
      RCT I 209548-68-5
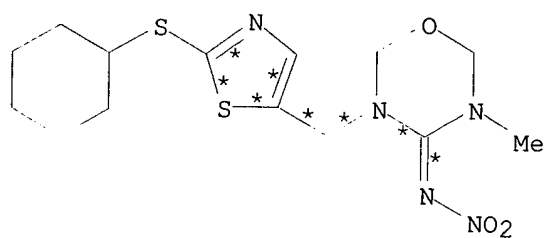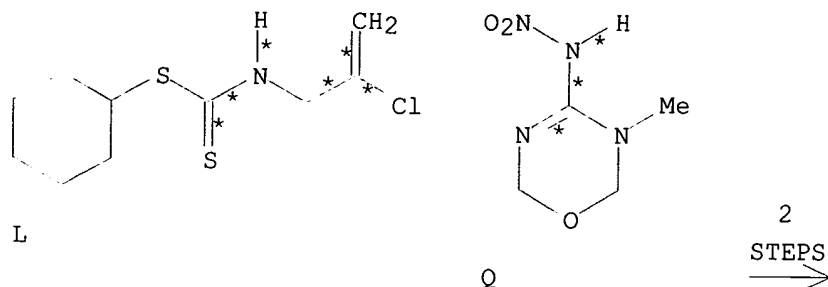
    STAGE(3)
      RGT U 7732-18-5 Water

    STAGE(4)
      RGT E 7647-01-0 HCl
    PRO R **192439-46-6**

RX(11) OF 16 COMPOSED OF RX(3), RX(6)
RX(11)   L + Q ===> **W**

L

Q

2
STEPS
⟶

W

RX(3)   RCT L **209548-65-2**

    STAGE(1)
      SOL 75-05-8 MeCN

    STAGE(2)
      RGT J 7726-95-6 Br2
  PRO M 209548-69-6

RX(6)   RCT Q 153719-38-1

    STAGE(1)
      RGT S 584-08-7 K2CO3, T 36273-11-7 4-Aza-1-
          azoniabicyclo[2.2.2]octane, 1-(chloromethyl)-, chloride
      SOL 78-93-3 EtCOMe

    STAGE(2)
      RCT M 209548-69-6

    STAGE(3)
      RGT U 7732-18-5 Water

    STAGE(4)
      RGT E 7647-01-0 HCl
  PRO W **192439-47-7**

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FILE 'HOME' ENTERED AT 10:43:56 ON 13 DEC 2002